

2003B079 US
RCE Request to OA dated 6/20/2006
Response Dated July 13, 2006

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REMARKS

Claims 1-25, 27-35, 38-43, and 46-83 are before the Examiner. No claim has been amended in this reply.

Claims 1-25, 27-35, 38-43, and 46-83 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dias et al. (WO/ 02/48257 A2) (hereinafter Dias"). This rejection is respectfully traversed.

In accordance with this invention it has be discovered that an isobutylene elastomeric composition comprising a measured amount of carbon black have a surface area of less than 30 m²/g and a measured amount of polybutene oil obtains an elastomer composition of reduced air permeability. It is well known in the art that a small reduction in air permeability constitutes an important advance in the art. Safety of tires depends to a great degree on the air impermeability.

The Office Action and the Advisory Action urges that applicants have not presented proper side-by-side examples. It is respectfully submitted that side-by-side examples are not a requirement. Applicants' application demonstrates a significant improvement in air impermeability (over 30% increase) without a sacrifice in processability, as shown in the Examples. See, for example, Examples 18-20 and 24-26. Applicants submit that "a clear indication of the source of the unexpected result" is not required. It is respectfully submitted that comparison with the closest prior art is required. It is therefore submitted that the requirement of side-by-side examples be withdrawn.

The Office Action has also stated that the inventive and comparative data of the instant specification as originally filed is not commensurate in scope with the claim. The undersigned respectfully disagrees.

- Table 2, page 25 of the application carbon black properties are presented. No claim in this case includes N-660 or N-700.
- Table 5, page 45 demonstrates the use of higher amounts (93phr) of standard N-660 black gives 14 % reduction in air permeability, nevertheless the other physical properties would be readily recognized by the ordinary practitioner in the art as being poorer.

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- Table 7, at page 48 shows high amounts of low surface area Regal 90 black, but no polybutene results in 12.5 % lower air permeability.
- Table 11, page 42 shows low surface area Regal 85 black with Parapol 1300 polybutene gives a 27% reduction in air permeability.
- Table 14, at page 55 shows low surface area N-990 black with Parapol 2400 polybutene give a 36 % reduction in air permeability. Thus applicants have presented three (3) low surface area blacks and two different Parapol polybutene grades (Table 1 Page 22).

It is respectfully submitted that this showing of 3 blacks is contrary to the Office Action's position that applicants have only demonstrated one type of black. It is believed that a showing of 3 different blacks having a surface area of less than $30 \text{ m}^2/\text{g}$ with two different polybutenes causes the specification and examples to be commensurate in scope with the claims. It is also submitted that the reduction in permeability of 27 % and 36 % is a clear and unequivocal demonstration of unexpected results over the prior art. Such reductions amount to a significant improvement in tire safety. Applicants also submit that the three carbon blacks are commensurate in scope with the claimed carbon black which has $\text{N}_2\text{SA} < 30 \text{ m}^2/\text{g}$ and $\text{DBP} < 80 \text{ cm}^3/100 \text{ g}$ (not $30 \text{ cm}^3/100 \text{ g}$ as stated in the Advisory Action).

That specific combination of components surprisingly and unexpectedly provides a significant improvement in air impermeability without a sacrifice in processability, as shown in the Examples. See, for example, Examples 18-20 and 24-26.

Dias generally discloses various amounts of elastomer, carbon black and processing oil, as noted by the Office Action. However, Dias does not disclose with "sufficient specificity" a composition comprising 20 to 100 phr of an elastomer comprising at least 30 mol% of isobutylene; 80 to 200 phr of carbon black having a surface area of less than $30 \text{ m}^2/\text{g}$ and a dibutylphthalate oil absorption of less than $80 \text{ cm}^3/100 \text{ gm}$; and 2 to 40 phr of polybutene oil, as required in the claims.

Here, Applicant has discovered a significantly improved balance of elastomer processability and air impermeability of the elastomer compositions falling within the limitations of the claims, as discussed in paragraphs [00101], [00103], [00104], [00106], and [00109], and the examples which show over an important improvement in air impermeability

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without a sacrifice in processability. Therefore, the claims are not obvious in view of Dias if for no other reason than the claimed subject matter provides the unexpected results discussed above. For at least these reasons, withdrawal of the rejection and allowance of the claims is respectfully requested.

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CONCLUSION


Having addressed all issues set out in the office action, Applicant respectfully submits that the pending claims are now in condition for allowance. Prompt notice of allowance is respectfully solicited. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been addressed to the Examiner's satisfaction.

Having addressed all issues set out in the office action, Applicant respectfully submits that the pending claims are now in condition for allowance. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been addressed to the Examiner's satisfaction. The Commissioner is hereby authorized to charge counsel's Deposit Account No. 05-1712, for any fees, including extension of time fees or excess claim fees, required to make this response timely and acceptable to the Office.

Respectfully submitted,

July 13, 2006

Date



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